

CLAIMS

1 1. An apparatus for adjusting fan speed, comprising:
2 a fan;
3 an angular speed sensor, wherein the angular speed sensor
4 measures at least one angular speed of the fan;
5 an energy unit, wherein the energy unit provides energy
6 output to the fan; and
7 a feedback unit, wherein the feedback unit:
8 at least compares the at least one angular speed to
9 a set angular speed level; and
10 at least instructs the energy unit to adjust the
11 energy output to the fan to at least substantially
12 provide the set angular speed level.

1 2. The apparatus of Claim 1, wherein the angular speed
2 sensor further comprises a tachometer.

1 3. The apparatus of Claim 1, wherein the angular speed
2 sensor further comprises a flow meter.

1 4. The apparatus of Claim 1, wherein the fan further
2 comprises:
3 a plurality of fan blades; and

4 an electric motor at least coupled to the plurality of
5 fan blades.

1 5. The apparatus of Claim 4, wherein the energy unit
2 further comprises an adjustable electrical power supply.

1 6. The apparatus of Claim 1, wherein the fan further
2 comprises a plurality of fan blades.

1 7. The apparatus of Claim 6, wherein the energy unit
2 further comprises:

3 a mechanical engine at least coupled to the plurality of
4 fan blades; and

5 an engine control unit, wherein the engine control unit
6 at least controls mechanical energy output of the mechanical
7 engine.

1 8. A feedback unit for adjusting fan speed, comprising:
2 an angular speed sensor, wherein the angular speed sensor
3 measures at least one angular speed of a fan;

4 an energy unit, wherein the energy unit provides energy
5 output to the fan;

6 a comparison unit, wherein the comparison unit at least
7 compares the at least one angular speed to a set angular speed
8 level; and

9 an instruction unit, wherein the instruction unit at
10 least instructs the energy unit to adjust the energy output to
11 the fan to at least provide the set angular speed level.

1 9. The feedback unit of Claim 8, wherein the angular
2 speed sensor further comprises a tachometer.

1 10. The feedback unit of Claim 8, wherein the angular
2 speed sensor further comprises a flow meter.

1 11. The feedback unit of Claim 8, wherein the fan
2 further comprises:

3 a plurality of fan blades; and

4 an electric motor at least coupled to the plurality of
5 fan blades.

1 12. The feedback unit of Claim 11, wherein the energy
2 unit further comprises an adjustable electrical power supply.

1 13. The feedback unit of Claim 8, wherein the energy
2 unit further comprises a mechanical engine at least coupled to
3 the fan.

1 14. An apparatus for determining fan failure or fan
2 wear, comprising:

3 an energy unit, wherein the energy unit provides energy
4 output to a fan;

5 a measurement unit, wherein the measurement unit at least
6 measures the energy output to the fan;

7 an angular speed sensor, wherein the angular speed sensor
8 measures at least one angular speed of the fan;

9 a processing unit, wherein the processing unit at least
10 compares the energy output to the fan with the at least one
11 angular speed of the fan over time to determine fan failure or
12 fan wear.

1 15. The apparatus of Claim 14, wherein the angular speed
2 sensor further comprises a tachometer.

1 16. The apparatus of Claim 14, wherein the angular speed
2 sensor further comprises a flow meter.

1 17. The apparatus of Claim 14, wherein the fan further
2 comprises:

3 a plurality of fan blades; and

4 an electric motor at least coupled to the plurality of
5 fan blades.

1 18. The apparatus of Claim 17, wherein the energy unit
2 further comprises an adjustable electrical power supply.

1 19. The apparatus of Claim 14, wherein the energy unit
2 further comprises a mechanical engine at least coupled to the
3 fan.

1 20. The apparatus of Claim 14, wherein the processing
2 unit comprises at least being configured to use historical
3 data of the energy output to the fan with the at least one
4 angular speed of the fan to determine if energy consumption is
5 increasing.

1 21. An apparatus for determining fan failure or fan
2 wear, comprising a processing unit, wherein the processing
3 unit at least compares energy output to the fan with at least

4 one angular speed of the fan over time to at least determine
5 fan failure or fan wear.

1 22. The apparatus of Claim 21, wherein the processing
2 unit comprises at least being configured to use historical
3 data of the energy output to the fan with the at least one
4 angular speed of the fan to determine if energy consumption is
5 increasing.

1 23. An apparatus for adjusting fan speed, comprising:
2 a fan;
3 an angular speed sensor, wherein the angular speed sensor
4 measures at least one angular speed of the fan;
5 an energy unit, wherein the energy unit provides energy
6 output to the fan;
7 a feedback unit, wherein the feedback unit:
8 at least compares the at least one angular speed to
9 a set angular speed level; and
10 at least instructs the energy unit to adjust the
11 energy output to the fan to at least provide the set
12 angular speed level; and
13 a processing unit, wherein the processing unit at least
14 compares the energy output to the fan with the at least one

15 angular speed of the fan over time to determine fan failure or
16 fan wear.

1 24. The apparatus of Claim 23, wherein the angular speed
2 sensor further comprises a tachometer.

3

1 25. The apparatus of Claim 23, wherein the angular speed
2 sensor further comprises an flow meter.

1 26. The apparatus of Claim 23, wherein the fan further
2 comprises:

3 a plurality of fan blades; and

4 an electric motor at least coupled to the plurality of
5 fan blades.

1 27. The apparatus of Claim 26, wherein the energy unit
2 further comprises an adjustable electrical power supply.

1 28. The apparatus of Claim 23, wherein the fan further
2 comprises a plurality of fan blades.

1 29. The apparatus of Claim 28, wherein the energy unit
2 further comprises:

3 a mechanical engine at least coupled to the plurality of
4 fan blades; and

5 an engine control unit, wherein the engine control unit
6 at least controls mechanical energy output of the mechanical
7 engine.

1 30. A method of correcting a fan's angular speed,
2 comprising:

3 measuring an angular speed of the fan;

4 comparing the angular speed of the fan to a set fan
5 speed;

6 adjusting energy output to the fan to at least achieve
7 the set fan speed.

1 31. The method of Claim 30, wherein step of measuring
2 the angular speed of the fan further comprises measuring the
3 Revolutions Per Minute (RPMs) of the fan.

1 32. The method of Claim 30, wherein the step of
2 adjusting the energy output to the fan further comprises

3 adjusting electrical energy output to an electric motor at
4 least coupled to a plurality of blades.

1 33. The method of Claim 30, wherein the step of
2 adjusting the energy output to the fan further comprises
3 adjusting mechanical energy output of the mechanical engine at
4 least coupled to a plurality of blades.

1 34. A method for determining fan failure or fan wear,
2 comprising:

3 measuring an angular speed of a fan;

4 measuring an energy output to the fan;

5 determining if there is an impending fan failure base on
6 the angular speed of the fan and the energy output to the fan.

1 35. The method of Claim 34, wherein the step of
2 determining if there is an impending fan failure further
3 comprises:

4 storing the angular speed of the fan versus the energy
5 output to the fan;

6 comparing the angular speed of the fan and the energy
7 output to the fan; and

8 determining if the energy output to the fan is at least
9 increasing relative to the angular speed of the fan.

1 36. The method of Claim 34, wherein the step of
2 determining if there is an impending fan failure further
3 comprises:

4 comparing the angular speed of the fan and the energy
5 output to the fan to a predetermined consumption; and

6 determining if the energy output to the fan is at least
7 greater than the predetermined consumption.

1 37. A computer program product for correcting a fan's
2 angular speed, computer program product having a medium with a
3 computer program embodied thereon, the computer program
4 comprising:

5 computer code for measuring an angular speed of the fan;

6 computer code for comparing the angular speed of the fan
7 to a set fan speed;

8 computer code for adjusting energy output to the fan to
9 at least achieve the set fan speed.

1 38. The computer program product of Claim 37, wherein
2 computer code for measuring the angular speed of the fan
3 further comprises computer code for measuring the Revolutions
4 Per Minute (RPMs) of the fan.

1 39. The computer program product of Claim 37, wherein
2 the computer code for adjusting the energy output to the fan
3 further comprises computer code for adjusting electrical
4 energy output to an electric motor at least coupled to a
5 plurality of blades.

1 40. The computer program product of Claim 37, wherein
2 the computer code for adjusting the energy output to the fan
3 further comprises computer code for adjusting mechanical
4 energy output of the mechanical engine at least coupled to a
5 plurality of blades.

1 41. A computer program product for determining fan
2 failure, computer program product having a medium with a
3 computer program embodied thereon, the computer program
4 comprising:

5 computer code for measuring an angular speed of a fan;
6 computer code for measuring an energy output to the fan;
7 computer code for determining if there is an impending
8 fan failure base on the angular speed of the fan and the
9 energy output to the fan.

1 42. The computer program product of Claim 41, wherein
2 the step of determining if there is an impending fan failure
3 further comprises:
4 computer code for storing the angular speed of the fan
5 versus the energy output to the fan;
6 computer code for comparing the angular speed of the fan
7 and the energy output to the fan; and
8 computer code for determining if the energy output to the
9 fan is at least increasing relative to the angular speed of
10 the fan.

1 43. The computer program product of Claim 41, wherein
2 the computer code for determining if there is an impending fan
3 failure further comprises:
4 computer code for comparing the angular speed of the fan
5 and the energy output to the fan to a predetermined
6 consumption; and
7 computer code for determining if the energy output to the
8 fan is at least greater than the predetermined consumption.